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EXAMINER	
SMITHERS, MATTHEW	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/715,693	WANG, CHARLES	
	Examiner	Art Unit	
	Matthew B. Smithers	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-7 and 12* is/are allowed.

6)☒ Claim(s) *8-11,13-19,21-24,26-28,30-40* is/are rejected.

7)☒ Claim(s) *20,25 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/29/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement filed March 29, 2007 has been placed in the application file and the information referred to therein has been considered as to the merits.

Response to Arguments

Applicant's arguments, see page 2-3, filed December 13, 2007, with respect to claims 1-7, 12, 20, 25 and 29 have been fully considered and are persuasive. The rejection of claims 1-7, 12, 20, 25, and 29 have been withdrawn.

Applicant's arguments filed December 13, 2007 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., for every network service access point identifier (NSAPI) using unacknowledged peer-to-peer LLC operation, setting a sequence number of the next network packet data unit (N-PDU) to be sent by the SNDCP to zero; if the NSAPI is using unacknowledged peer-to-peer LLC operation, then: transmitting outstanding SNDCP-to-LLC requests to the LLC.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Based on the response to arguments above, the examiner maintains the rejection of claims 8-11, 13-19, 21, 22, 26-28, and 30-40.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8-11, 13-19, 21-24, 26-28, and 30-40 are rejected under 35 U.S.C. 102(e) as being anticipate by US 20040053623 granted to Hoff et al.

Regarding claim 8, Hoff meets the claimed limitations as follows:

"A method to provide reliable communications between a mobile station (MS) and a wireless communication network after a layer-2 component of the MS is reset, the method comprising the acts of:

sending one or more requests having an unconfirmed transmission status from a layer-3 component of the MS to the layer-2 component; and sending the one or more requests over an unacknowledged logical link from the MS to the wireless communication network." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 9, Hoff meets the claimed limitations as follows:

"The method of claim 8, comprising the further act of: acknowledging the layer-3

component that the one or more requests have been transmitted." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 10, Hoff meets the claimed limitations as follows:

"The method of claim 8, wherein the layer-2 component comprises a Sub-Network Dependent Convergence Protocol (SNDCP) and the layer-3 component comprises a Logical Link Control (LLC) layer." see Abstract; paragraphs [0024]-[0087] and figures 1, 2, 3, 4, 5, and 6.

Regarding claim 11, Hoff meets the claimed limitations as follows:

"In a mobile station (MS), a method to prevent discarding one or more requests that are pending from layer-3 to a Logical Link Control (LLC) layer, the method comprising the acts of:

flushing a first instance of one or more pending packet data units (PDUs) from a PDU transmit queue associated with the LLC layer; receiving a second instance of the one or more pending PDUs from the layer-3; and sending the second instance of the one or more pending PDUs from the MS via an unacknowledged logical link." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 13, Hoff meets the claimed limitations as follows:

"A system for unacknowledged Network Layer Service Access Point Identifier (NSAPI) recovery in Sub-Network Dependent Convergence Protocol (SNDCP) communication, comprising:

a recovering SNDCP module having: a protocol interface which receives packet data units (PDUs) and multiplexes unacknowledged NSAPI communications into requests;

means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a Logical Link Control (LLC) module connected to the layer-2 interface and having: a queue for queuing the requests received from the recovering SNDCP module, the requests including the PDU transmit requests; means for acknowledging the recovering SNDCP upon completion of the requests; means for indicating the layer-2 reset indication to the recovering SNDCP; a layer-1 module connected to the LLC module via the layer-1 interface for transmitting the PDUs from a first component of the system to a second component of the system over a physical layer." see Abstract; paragraphs [0024]-[0087] and figures 1, 2, 3, 4, 5, and 6.

Regarding claim 14, Hoff meets the claimed limitations as follows:

"A system for unacknowledged layer-2 recovery in layer-3 communication, comprising: a recovering layer-3 module having: a protocol interface for receiving data and multiplexing the data into requests; means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a layer-2 module connected to the layer-2 interface of the recovering layer-3 module, the layer-2 module having: a queue for queuing the requests received from the layer-3 module; the requests including the data; means for acknowledging to the recovering layer-3 module upon completion of the requests; means for indicating a reset condition to the

recovering layer-3 module via the layer-2 reset indication of the layer-2 interface; a layer-1 interface for transmitting the data to a layer-1 module; a layer-1 module connected to the layer-2 module via the layer-1 interface for transmitting the data from a first component of the system to a second component of the system over a physical layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 15, Hoff meets the claimed limitations as follows:

"The system of claim 14, wherein the recovering layer-3 module comprises a Sub-Network Dependent Convergence Protocol (SNDCP) module for General Packet Radio Service (GPRS)." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 16, Hoff meets the claimed limitations as follows:

"A system of claim 14, wherein the layer-2 module comprises a Logical Link Control (LLC) module for General Packet Radio Service (GPRS) ." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 17, Hoff meets the claimed limitations as follows:

"The system of claim 14, wherein the layer-1 module comprises a Global System for Mobile (GSM) sub-layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 18, Hoff meets the claimed limitations as follows:

"The system of claim 14, wherein the layer-1 module comprises a Universal Mobile Telecommunications System (UMTS) sub-layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 19, Hoff meets the claimed limitations as follows:

"A method of layer-2 recovery comprising the acts of: identifying a layer-2 reset condition in layer-3; after identifying the layer-2 reset condition, identifying outstanding layer-3 to layer-2 requests for unacknowledged layer-2 communication; and resending outstanding layer-3 to layer-2 requests from layer-3 to layer-2." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 21, Hoff meets the claimed limitations as follows:

"A protocol stack for a mobile station (MS) comprising:

a recovering layer which receives data and sends the data as requests, the recovery layer including: a tracking module which tracks outstanding requests that have not received acknowledgements from a lower transmitting layer; a resend module which resends the outstanding requests upon receiving a reset indicator from the transmitting layer; and a transmitting layer which receives requests from the recovering layer, sends acknowledgements to the recovering layer corresponding to requests that have been sent, and signals the reset indicator to the recovery layer upon occurrence of a reset at the transmitting layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 22, Hoff meets the claimed limitations as follows:

"A mobile station, comprising:

a receiver;

a transmitter; an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the

transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and the layer-3 module being further operative to resend one or more requests that are unacknowledged by the layer-2.module in response to a reset indication." see Abstract; paragraphs [0024]-[0087] and figures, 1,2, 3, 4, 5, and 6.

Regarding claim 23, Hoff meets the claimed limitations as follows:

"The mobile station of claim 22, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 24, Hoff meets the claimed limitations as follows:

"The mobile station of claim 22, further comprising: the layer-2 module comprising a Logical Link Control (LLC) layer; and the layer-3 module comprising a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 26, Hoff meets the claimed limitations as follows:

"A method of communicating data comprising:

facilitating data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and in response to a reset

indication, resending one or more requests that are unacknowledged by the layer-2 module." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 27, Hoff meets the claimed limitations as follows:

"The method of claim 26, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 28, Hoff meets the claimed limitations as follows:

"The method of claim 26, wherein the layer-2 module comprises a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see Abstract; paragraphs [0024]-[0087] and figures 1, 2, 3, 4, 5, and 6.

Regarding claim 30, Hoff meets the claimed limitations as follows:

"A method of communicating data in a mobile station, comprising the acts of: facilitating a data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; receiving a reset at the layer-2 module before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the queue of the layer-2 module; flushing a queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; and in response to the reset indication, resending, from the layer-3 module to the layer-2 module, the one or more additional requests which have been

unacknowledged by the layer-2 module." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 31, Hoff meets the claimed limitations as follows:

"The method of claim 30, further comprising: sending, from the layer-2 module to the destination node, the one or more additional requests resent by the layer-3 module." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 32, Hoff meets the claimed limitations as follows:

"The method of claim 30, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 33, Hoff meets the claimed limitations as follows:

"The method of claim 30, wherein the layer-2 modules a Logical Link recovering Sub-Network Control (LLC) layer and the layer-3 module comprises a Dependent Convergence Protocol (SNDCP) layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 34, Hoff meets the claimed limitations as follows:.

"A mobile station, comprising: a receiver; a transmitter; an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate a data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged from the layer-2

module but unacknowledged from a destination node; the layer-2 module being operative to receive a reset at the layer-2 module before the data communication is fully completed; the layer-3 module being operative to continue attempting at least a portion of the data communication by sending one or more additional requests to the layer-2 module; the layer-2 module being operative to flush the queue in response to the reset; the layer-3 module being operative to receive a reset indication at the layer-3 module; and the layer-3 module being operative to resend the one or more additional requests to the layer-2 module which have been unacknowledged by the layer-2 module." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 35, Hoff meets the claimed limitations as follows:

"The mobile station of claim 34, further comprising:

the layer-2 module being further operative to send the one or more additional requests resent from the layer-3 module to the destination node." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 36, Hoff meets the claimed limitations as follows:

"The mobile station of claim 34, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 37, Hoff meets the claimed limitations as follows:

"The mobile station of claim 34, wherein the layer-2 modules a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent

Convergence Protocol (SNDCP) layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 38, Hoff meets the claimed limitations as follows:

"A method of communicating data in a mobile station comprising the acts of: operating in a General Packet Radio Service (GPRS) mode; facilitating a data communication in the GPRS mode which includes: sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged from the layer-2 module but unacknowledged from a Serving GPRS support node (SGSN); sending the requests from the queue of the layer-2 module to the SGSN; switching operation from the GPRS mode to a Global Systems for Mobile (GSM) mode before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the layer-2 module; receiving a reset at the layer-2 module due to the switching from the GPRS mode; flushing the queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; resending, by the layer-3 module to the layer-2 module, the one or more additional requests which have been unacknowledged by the layer-2 module; switching operation back to the GPRS mode from the GSM mode; and completing the data communication in the GPRS mode by sending, from the layer-2 module to the SGSN, the one or more requests resent by the layer-3 module." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 39, Hoff meets the claimed limitations as follows:

"The method of claim 38, wherein the requests comprise unacknowledged Network

Layer Service Access Point Identifier (NSAPI) requests." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Regarding claim 40, Hoff meets the claimed limitations as follows:

"The method of claim 38, wherein the layer-2 modules a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see Abstract; paragraphs [0024]-[0087] and figures 1,2, 3, 4, 5, and 6.

Claims 8-11, 13-19, 21-24, 26-28, and 30-40 are rejected under 35 U.S.C. 102(e) as being anticipated by US 20040210559 granted to Qvigstad.

Regarding claim 8, Qvigstad meets the claimed limitations as follows:

"A method to provide reliable communications between a mobile station (MS) and a wireless communication network after a layer-2 component of the MS is reset, the method comprising the acts of:

sending one or more requests having an unconfirmed transmission status from a layer-3 component of the MS to the layer-2 component; and sending the one or more requests over an unacknowledged logical link from the MS to the wireless communication network." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 9, Qvigstad meets the claimed limitations as follows:

"The method of claim 8, comprising the further act of: acknowledging the layer-3 component that the one or more requests have been transmitted." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 10, Qvigstad meets the claimed limitations as follows: "The method of claim 8, wherein the layer-2 component comprises a Sub-Network Dependent Convergence Protocol (SNDCP) and the layer-3 component comprises a Logical Link Control (LLC) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 11, Qvigstad meets the claimed limitations as follows: "In a mobile station (MS), a method to prevent discarding one or more requests that are pending from layer-3 to a Logical Link Control (LLC) layer, the method comprising the acts of: flushing a first instance of one or more pending packet data units (PDUs) from a PDU transmit queue associated with the LLC layer; receiving a second instance of the one or more pending PDUs from the layer-3; and sending the second instance of the one or more pending PDUs from the MS via an unacknowledged logical link." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 13, Qvigstad meets the claimed limitations as follows: "A system for unacknowledged Network Layer Service Access Point Identifier (NSAPI) recovery in Sub-Network Dependent Convergence Protocol (SNDCP) communication, comprising:
a recovering SNDCP module having: a protocol interface which receives packet data units (PDUs) and multiplexes unacknowledged NSAPI communications into requests; means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a Logical Link Control (LLC) module connected to

the layer-2 interface and having: a queue for queuing the requests received from the recovering SNDCP module, the requests including the PDU transmit requests; means for acknowledging the recovering SNDCP upon completion of the requests; means for indicating the layer-2 reset indication to the recovering SNDCP; a layer-1 module connected to the LLC module via the layer-1 interface for transmitting the PDUs from a first component of the system to a second component of the system over a physical layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 14, Qvigstad meets the claimed limitations as follows: "A system for unacknowledged layer-2 recovery in layer-3 communication, comprising: a recovering layer-3 module having: a protocol interface for receiving data and multiplexing the data into requests; means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a layer-2 module connected to the layer-2 interface of the recovering layer-3 module, the layer-2 module having: a queue for queuing the requests received from the layer-3 module; the requests including the data; means for acknowledging to the recovering layer-3 module upon completion of the requests; means for indicating a reset condition to the recovering layer-3 module via the layer-2 reset indication of the layer-2 interface; a layer-1 interface for transmitting the data to a layer-1 module; a layer-1 module connected to the layer-2 module via the layer-1 interface for transmitting the data from a

first component of the system to a second component of the system over a physical layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 15, Qvigstad meets the claimed limitations as follows: "The system of claim 14, wherein the recovering layer-3 module comprises a Sub-Network Dependent Convergence Protocol (SNDCP) module for General Packet Radio Service (GPRS) ." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 16, Qvigstad meets the claimed limitations as follows: "A system of claim 14, wherein the layer-2 module comprises a Logical Link Control (LLC) module for General Packet Radio Service (GPRS)." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 17, Qvigstad meets the claimed limitations as follows: "The system of claim 14, wherein the layer-1 module comprises a Global System for Mobile (GSM) sub-layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 18, Qvigstad meets the claimed limitations as follows: "The system of claim 14, wherein the layer-1 module comprises a Universal Mobile Telecommunications System (UMTS) sub-layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 19, Qvigstad meets the claimed limitations as follows: "A method of layer-2 recovery comprising the acts of: identifying a layer-2 reset condition in layer-3; after identifying the layer-2 reset condition, identifying outstanding layer-3 to layer-2 requests for unacknowledged layer-2 communication; and

resending outstanding layer-3 to layer-2 requests from layer-3 to layer-2." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 21, Qvigstad meets the claimed limitations as follows:

"A protocol stack for a mobile station (MS) comprising:

a recovering layer which receives data and sends the data as requests, the recovery layer including:

a tracking module which tracks outstanding requests that have not received acknowledgements from a lower transmitting layer; a resend module which resends the outstanding requests upon receiving a reset indicator from the transmitting layer;

and a transmitting layer which receives requests from the recovering layer, sends acknowledgements to the recovering layer corresponding to requests that have been sent, and signals the reset indicator to the recovery layer upon occurrence of a reset at the transmitting layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 22, Qvigstad meets the claimed limitations as follows:

"A mobile station, comprising: a receiver; a transmitter;

an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and the layer-3 module being further operative to resend one or more requests that are

unacknowledged by the layer-2 module in response to a reset indication." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 23, Qvigstad meets the claimed limitations as follows: "The mobile station of claim 22, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 24, Qvigstad meets the claimed limitations as follows: "The mobile station of claim 22, further comprising: the layer-2 module comprising a Logical Link Control (LLC) layer; and the layer-3 module comprising a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 26, Qvigstad meets the claimed limitations as follows: "A method of communicating data comprising:
facilitating data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and in response to a reset indication, resending one or more requests that are unacknowledged by the layer-2 module." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 27, Qvigstad meets the claimed limitations as follows: "The method of claim 26, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 28, Qvigstad meets the claimed limitations as follows:
"The method of claim 26, wherein the layer-2 module comprises a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 30, Qvigstad meets the claimed limitations as follows:
"A method of communicating data in a mobile station, comprising the acts of:
facilitating a data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; receiving a reset at the layer-2 module before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the queue of the layer-2 module; flushing a queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; and in response to the reset indication, resending, from the layer-3 module to the layer-2 module, the one or more additional requests which have been unacknowledged by the layer-2 module." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 31, Qvigstad meets the claimed limitations as follows:
"The method of claim 30, further comprising:
sending, from the layer-2 module to the destination node, the one or more additional

requests resent by the layer-3 module." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 32, Qvigstad meets the claimed limitations as follows: "The method of claim 30, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 33, Qvigstad meets the claimed limitations as follows: "The method of claim 30, wherein the layer-2 modules a Logical Link recovering Sub-Network Control (LLC) layer and the layer-3 module comprises a Dependent Convergence Protocol (SNDCP) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 34, Qvigstad meets the claimed limitations as follows: "A mobile station, comprising: a receiver; a transmitter; an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate a data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged from the layer-2 module but unacknowledged from a destination node; the layer-2 module being operative to receive a reset at the layer-2 module before the data communication is fully completed; the layer-3 module being operative to continue attempting at least a portion of the data communication by sending one or more additional requests to the layer-2

module; the layer-2 module being operative to flush the queue in response to the reset; the layer-3 module being operative to receive a reset indication at the layer-3 module; and the layer-3 module being operative to resend the one or more additional requests to the layer-2 module which have been unacknowledged by the layer-2 module." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 35, Qvigstad meets the claimed limitations as follows:

"The mobile station of claim 34, further comprising:

the layer-2 module being further operative to send the one or more additional requests resent from the layer-3 module to the destination node." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 36, Qvigstad meets the claimed limitations as follows:

"The mobile station of claim 34, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 37, Qvigstad meets the claimed limitations as follows:

"The mobile station of claim 34, wherein the layer-2 modules a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 38, Qvigstad meets the claimed limitations as follows:

"A method of communicating data in a mobile station comprising the acts of: operating in a General Packet Radio Service (GPRS) mode; facilitating a data communication in

the GPRS mode which includes: sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged from the layer-2 module but unacknowledged from a Serving GPRS support node (SGSN); sending the requests from the queue of the layer-2 module to the SGSN; switching operation from the GPRS mode to a Global Systems for. Mobile (GSM) mode before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the layer-2 module; receiving a reset at the layer-2 module due to the switching from the GPRS mode; flushing the queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; resending, by the layer-3 module to the layer-2 module, the one or more additional requests which have been unacknowledged by the layer-2 module; switching operation back to the GPRS mode from the GSM mode; and completing the data communication in the GPRS mode by sending, from the layer-2 module to the SGSN, the one or more requests resent by the layer-3 module." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 39, Qvigstad meets the claimed limitations as follows: "The method of claim 38, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see paragraphs [0042]-[0092] and figures 4 and 5.

Regarding claim 40, Qvigstad meets the claimed limitations as follows: "The method of claim 38, wherein the layer-2 modules a Logical Link control (LLC) layer

and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see paragraphs [0042]-[0092] and figures 4 and 5.

Claims 8-11, 13-19, 21-24, 26-28, and 30-40 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,385,451 granted to Kalliokulju et al.

Regarding claim 8, Kalliokulju meets the claimed limitations as follows: "A method to provide reliable communications between a mobile station (MS) and a wireless communication network after a layer-2 component of the MS is reset, the method comprising the acts of: sending one or more requests having an unconfirmed transmission status from a layer-3 component of the MS to the layer-2 component; and sending the one or more requests over an unacknowledged logical link from the MS to the wireless communication network." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 9, Kalliokulju meets the claimed limitations as follows: "The method of claim 8, comprising the further act of: acknowledging the layer-3 component that the one or more requests have been transmitted." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 10, Kalliokulju meets the claimed limitations as follows: "The method of claim 8, wherein the layer-2 component comprises a Sub-Network Dependent Convergence Protocol (SNDCP) and the layer-3 component comprises a Logical Link Control (LLC) layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 11, Kalliokulju meets the claimed limitations as follows:
"In a mobile station (MS), a method to prevent discarding one or more requests that are pending from layer-3 to a Logical Link Control (LLC) layer, the method comprising the acts of:
flushing a first instance of one or more pending packet data units (PDUs) from a PDU transmit queue associated with the LLC layer; receiving a second instance of the one or more pending PDUs from the layer-3; and sending the second instance of the one or more pending PDUs from the MS via an unacknowledged logical link." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 13, Kalliokulju meets the claimed limitations as follows:
"A system for unacknowledged Network Layer Service Access Point Identifier (NSAPI) recovery in Sub-Network Dependent Convergence Protocol (SNDCP) communication, comprising:
a recovering SNDCP module having: a protocol interface which receives packet data units (PDUs) and multiplexes unacknowledged NSAPI communications into requests; means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a Logical Link Control (LLC) module connected to the layer-2 interface and having: a queue for queuing the requests received from the recovering SNDCP module, the requests including the PDU transmit requests; means for acknowledging the recovering SNDCP upon completion of the requests; means for

indicating the layer-2 reset indication to the recovering SNDCP; a layer-l module connected to the LLC module via the layer-1 interface for transmitting the PDUs from a first component of the system to a second component of the system over a physical layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 14, Kalliokulju meets the claimed limitations as follows: "A system for unacknowledged layer-2 recovery in layer-3 communication, comprising: a recovering layer-3 module having: a protocol interface for receiving data and multiplexing the data into requests; means for outstanding request tracking to determine the status of the requests; request resending means for selectively resending outstanding requests upon reception of a layer-2 reset indication; a layer-2 interface for transmitting the requests and for receiving the layer-2 reset indication; a layer-2 module connected to the layer-2 interface of the recovering layer-3 module, the layer-2 module having: a queue for queuing the requests received from the layer-3 module; the requests including the data; means for acknowledging to the recovering layer-3 module upon completion of the requests; means for indicating a reset condition to the recovering layer-3 module via the layer-2 reset indication of the layer-2 interface; a layer-1 interface for transmitting the data to a layer-1 module; a layer-1 module connected to the layer-2 module via the layer-1 interface for transmitting the data from a first component of the system to a second component of the system over a physical layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 15, Kalliokulju meets the claimed limitations as follows: "The system of claim 14, wherein the recovering layer-3 module comprises a Sub-

Network Dependent Convergence Protocol (SNDCP) module for General Packet Radio Service (GPRS)." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 16, Kalliokulju meets the claimed limitations as follows: "A system of claim 14, wherein the layer-2 module comprises a Logical Link Control (LLC) module for General Packet Radio Service (GPRS) ." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 17, Kalliokulju meets the claimed limitations as follows: "The system of claim 14, wherein the layer-1 module comprises a Global System for Mobile (GSM) sub-layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 18, Kalliokulju meets the claimed limitations as follows: "The system of claim 14, wherein the layer-1 module comprises a Universal Mobile Telecommunications System (UMTS) sub-layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 19, Kalliokulju meets the claimed limitations as follows: "A method of layer-2 recovery comprising the acts of:
identifying a layer-2 reset condition in layer-3; after identifying the layer-2 reset condition, identifying outstanding layer-3 to layer-2 requests for unacknowledged layer-2 communication; and resending outstanding layer-3 to layer-2 requests from layer-3 to layer-2." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 21, Kalliokulju meets the claimed limitations as follows: "A protocol stack for a mobile station (MS) comprising:

a recovering layer which receives data and sends the data as requests, the recovery layer including: a tracking module which tracks outstanding requests that have not received acknowledgements from a lower transmitting layer; a resend module which resends the outstanding requests upon receiving a reset indicator from the transmitting layer; and a transmitting layer which receives requests from the recovering layer, sends acknowledgements to the recovering layer corresponding to requests that have been sent, and signals the reset indicator to the recovery layer upon occurrence of a reset at the transmitting layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 22, Kalliokulju meets the claimed limitations as follows: "A mobile station, comprising: a receiver; a transmitter; an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and the layer-3 module being further operative to resend one or more requests that are unacknowledged by the layer-2 module in response to a reset indication." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 23, Kalliokulju meets the claimed limitations as follows: "The mobile station of claim 22, wherein the requests comprise unacknowledged

Network Layer Service Access Point Identifier (NSAPI) requests." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 24, Kalliokulju meets the claimed limitations as follows: "The mobile station of claim 22, further comprising: the layer-2 module comprising a Logical Link Control (LLC) layer; and the layer-3 module comprising a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 26, Kalliokulju meets the claimed limitations as follows: "A method of communicating data comprising:
facilitating data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; and in response to a reset indication, resending one or more requests that are unacknowledged by the layer-2 module." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 27, Kalliokulju meets the claimed limitations as follows: "The method of claim 26, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 28, Kalliokulju meets the claimed limitations as follows: "The method of claim 26, wherein the layer-2 module comprises a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent

Convergence Protocol (SNDCP) layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 30, Kalliokulju meets the claimed limitations as follows: "A method of communicating data in a mobile station, comprising the acts of: facilitating a data communication by sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged by the layer-2 module but unacknowledged by a destination node; receiving a reset at the layer-2 module before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the queue of the layer-2 module; flushing a queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; and in response to the reset indication, resending, from the layer-3 module to the layer-2 module, the one or more additional requests which have been unacknowledged by the layer-2 module." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 31, Kalliokulju meets the claimed limitations as follows: "The method of claim 30, further comprising: sending, from the layer-2 module to the destination node, the one or more additional requests resent by the layer-3 module." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 32, Kalliokulju meets the claimed limitations as follows: "The method of claim 30, wherein the requests comprise unacknowledged Network

Layer Service Access Point Identifier (NSAPI) requests." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 33, Kalliokulju meets the claimed limitations as follows: "The method of claim 30, wherein the layer-2 modules a Logical Link recovering Sub-Network Control (LLC) layer and the layer-3 module comprises a Dependent Convergence Protocol (SNDCP) layer." see column 9, line 66 to column .15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 34, Kalliokulju meets the claimed limitations as follows: "A mobile station, comprising: a receiver; a transmitter;
an antenna coupled to the receiver and the transmitter; one or more processors including: a layer-2 module which interfaces with the receiver and the transmitter; a layer-3 module which interfaces with the layer-2 module; the layer-3 module being operative to facilitate a data communication for the mobile station by sending a plurality of requests to a queue of the layer-2 module, each request being a type that is acknowledged from the layer-2 module but unacknowledged from a destination node; the layer-2 module being operative to receive a reset at the layer-2 module before the data communication is fully completed; the layer-3 module being operative to continue attempting at least a portion of the data communication by sending one or more additional requests to the layer-2 module; the layer-2 module being operative to flush the queue in response to the reset; the layer-3 module being operative to receive a reset indication at,the layer-3 module; and the layer-3 module being operative to resend the one or more additional requests to the layer-2 module which have been

unacknowledged by the layer-2 module." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 35, Kalliokulju meets the claimed limitations as follows: "The mobile station of claim 34, further comprising:
the layer-2 module being further operative to send the one or more additional requests resent from the layer-3 module to the destination node." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 36, Kalliokulju meets the claimed limitations as follows: "The mobile station of claim 34, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 37, Kalliokulju meets the claimed limitations as follows: "The mobile station of claim 34, wherein the layer-2 modules a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 38, Kalliokulju meets the claimed limitations as follows: "A method of communicating data in a mobile station comprising the acts of: operating in a General Packet Radio Service (GPRS) mode; facilitating a data communication in the GPRS mode which includes: sending a plurality of requests from a layer-3 module to a queue of a layer-2 module, each request being a type that is acknowledged from the layer-2 module but unacknowledged from a Serving GPRS support node (SGSN);

sending the requests from the queue of the layer-2 module to the SGSN; switching operation from the GPRS mode to a Global Systems for Mobile (GSM) mode before the data communication is fully completed; attempting to continue at least a portion of the data communication by sending one or more additional requests from the layer-3 module to the layer-2 module; receiving a reset at the layer-2 module due to the switching from the GPRS mode; flushing the queue of the layer-2 module in response to the reset; receiving a reset indication at the layer-3 module; resending, by the layer-3 module to the layer-2 module, the one or more additional requests which have been unacknowledged by the layer-2 module; switching operation back to the GPRS mode from the GSM mode; and completing the data communication in the GPRS mode by sending, from the layer-2 module to the SGSN, the one or more requests resent by the layer-3 module." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 39, Kalliokulju meets the claimed limitations as follows: "The method of claim 38, wherein the requests comprise unacknowledged Network Layer Service Access Point Identifier (NSAPI) requests." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Regarding claim 40, Kalliokulju meets the claimed limitations as follows: "The method of claim 38, wherein the layer-2 modules a Logical Link Control (LLC) layer and the layer-3 module comprises a recovering Sub-Network Dependent Convergence Protocol (SNDCP) layer." see column 9, line 66 to column 15, line 29; and figures 2, 3, 4 and 5.

Allowable Subject Matter

Claims 1-10 and 12 are allowed.

The following is an examiner's statement of reasons for allowance: The present invention is directed to a method and system for controlling data communications between a mobile terminal and a network. Independent claims 1 and 12 each recite the uniquely distinct features of "for every network service access point identifier (NSAPI) using unacknowledged peer-to-peer LLC operation, setting a sequence number of the next network packet data unit (N-PDU) to be sent by the SNDCP to zero; if the NSAPI is using unacknowledged peer-to-peer LLC operation, then: transmitting outstanding SNDCP-to-LLC requests to the LLC". The closest prior arts, Hoff et al (US 20040053623); Qvigstad et al (US 20040210559) and Kalliokulju et al (US 6,385,451), each fail to anticipate or render the above underlined limitations obvious. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claims 20, 25, and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 20, the cited prior arts fails to specifically teach upon identifying the reset condition in layer-3: setting unacknowledged layer-2 communication sequence acknowledged numbers to layer-2 zero in layer-3; and entering a recovery state in layer-3 for communications.

With respect to claim 25, the cited prior arts fails to specifically teach the layer-3 module being further operative to set, in response to the reset indication at the layer-3 module, a packet data unit (PDU) number to zero for use in resending the one or more requests.

With respect to claim 29, the cited prior arts fails to specifically teach in response to the reset indication at the layer-3 module, setting a packet data unit (PDU) number to zero for use in resending the one or more requests.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew B. Smithers whose telephone number is (571) 272-3876. The examiner can normally be reached on Monday-Friday (8:00-4:30) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel L. Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew B Smithers/
Primary Examiner, Art Unit 2137